

cut out, by being separated from its attachments, it continued to beat for a few moments; but these beats of the empty organ were not accompanied with any perceptible sounds.

The preceding experiment was repeated twice upon rabbits with the same results; viz. the sounds of the heart were most distinctly heard, although neither during its diastole nor during its systole could it come in contact with the thoracic walls.

In conclusion, the Professor states that the results of his direct examination of the sounds of the heart have confirmed him in the opinion that the double bruit or tic-tac, which imitates so closely the clicks of a valve, is, in fact, to be attributed to the play of the valves of the heart.—*Med. Chirurg. Rev. and Journal Hebdomadaire*, No. 9, 1834.

7. *On the Relations of the Cranium to the Organ of Hearing.*—Professor MOJON, of Geneva, in a memoir read before the Royal Academy of Medicine, on the 25th of March last, has suggested some novel and very interesting speculations on this subject. Hitherto we have been led to view the cranium only as a safe recipient of the cerebral mass and of its appendages; but M. M. ingeniously supposes that it serves at the same time as an harmonic case, or drum, to the auditory organs. Treviranus, Esser, and others had already observed that the tympanum is not essentially necessary to the transmission of sounds, and that the sonorous undulations may be conveyed to the nerve of hearing by the medium of the cranial bones; but no one, before our author, had attracted the attention of physiologists to the curious relations which seem to exist between certain states of the cranial bones and the power of discriminating musical sounds.

The post mortem examination of Dr. Bennati, first suggested to M. M. the following speculations, and they arose from his observing that the bones of the cranium were much thinner than usual, translucent at many points, and soldered together along the line of the sutures.

A similar condition of the cranial bones has subsequently been found by him in the body of another celebrated musician.

This coincidence of cranial attenuation, and musical endowments, led M. Mojon to consider whether it was possible that the one might be related to the other as cause and effect; and he has been induced by numerous observations to infer that the cranium is by no means quite passive, in the perception of sounds, that differences in the thickness of its walls may have very considerable influence in determining the degree of acuteness of the faculty, and therefore that it may be regarded as a sort of harmonic case which communicates its vibrations to the organs of hearing.

In confirmation of these views our author alludes to the cases of deaf people, who often can perceive very distinctly the sounds of a piano, or organ, by applying one extremity of an iron rod to their forehead, and the other to the instrument; and who may be made to hear what is said to them if only the voice is directed by a speaking trumpet upon some part of the forehead. It is not unfrequently also that a person whose hearing is indistinct, and who chances to wear a wig, can listen with much greater facility when the head is quite bare, than when it is covered.

The curious observations of M. Perier, on patients who had been trepanned, and who were found to hear quite distinctly any sound directed upon the cicatrix, even when both ears were effectually plugged, (vide our last No.) may also be mentioned as illustrative of M. Mojon's speculations.

Comparative anatomy shows that in a number of animals the transmission of sounds to the organ of hearing is assisted by numerous large sinuses, hollowed out in the bones of the cranium. To us it seems by no means improbable that the musical endowments of the feathered tribes may be in some degree at least modified, or influenced by the very attenuated condition of their cranial bones, and by the existence of the elastic lamellæ, which are found between their

supernumerary cavities, as well as the passages or canals which extend into the labyrinth.

The only practical deduction from the preceding views, regards the assistance which may possibly be derived from attention to them, in our diagnosis of deafness, when we wish to discover whether it is owing to a palsied state of the auditory nerves themselves, or merely to some defect or injury of the adjunct members of the auditory apparatus. The every day occurrence of a person squeezing his head with both hands to deaden any very loud noise, may very probably effect the desired purpose, as well by interrupting the cranial vibrations, as by the direct obstruction of the auditory passages.—*Journ. Hebdom. No. 16, 1834.*

8. *On the Question of Venous Absorption.* By Dr. LUCHTMANS.—Mention is made by Hippocrates* and Galen† of absorption and inhalation, which they believed were effected in the human body through the agency of the arteries and veins. But when Harvey, in the seventeenth century, had fully illustrated the circulation of the blood, from which it was plain that the blood was conveyed by the arteries from the centre to the periphery of the body, the power of the arterial absorption was deservedly rejected.‡ Not long after the discovery of the circulation of the blood, Casparus Asellius, (anno 1622,) found vessels filled with a whitish fluid in the mesentery of a dog, and on the surface of the intestines, which he named lacteals and lacteal veins. Already some idea of these had occurred in Herophilus and Erasistratus, (three hundred years before the birth of Christ;) and even in the year 1556, Bartholomæus Eustachius saw the thoracic duct in a horse, but mistook it for a vein, and called it the white thoracic vein, therefore, many physiologists have assigned the function of absorption to these vessels, discovered by Asellius in the first instance; after that Olaus Rudbeck, (anno 1650,) more fully demonstrated the thoracic duct, both its origin and continuation from the lacteal veins.

When diligent investigation taught that the lacteal vessels, in appearance at least, differed somewhat from the lymphatics, but that this kind of vessels was commonly dispersed throughout the body, physiologists began to doubt the seat of absorption and its apparatus, moreover, to divide into opposite opinions. For some regarded venous absorption to be proved by the testimony of the ancients; others thought that this action was to be attributed only to the lymphatic vessels.

Glisson, Bilsius, and Swammerdam§ are among those who supported venous absorption, who, having tied the mesenteric veins in a live animal, and after some time having opened them, saw the blood contained in them mixed with white stræ, and imagined that this matter was absorbed from the intestines by the veins. But some explain these stræ to consist of coagulable lymph; others of chyle not well mixed with the blood, and more or less dispersed through the whole body; while Hewson and Rudolph determine that the chyle was received from the arteries.

It was the opinion of Haller that veins, with the power of absorption, arose with small open mouths from the cavities of the body, and the cellular tissue, &c. as appears from various passages in his *Elements of Physiology*.|| He also derives jaundice from the bile absorbed through the sanguiferous veins.¶ Others, as Rosen, Waller, Meckel, Lobstein, and Sir Astley Cooper, have observed, that mercury injected into the lymphatic vessels, passed into the branches of the vena portæ. Tiedemann and Fohmann have found this anastomosis to exist in the glands.

K. Boerhaave (anno 1730) injected water into the stomach and intestines of a dead dog, and after continual pressure for several hours, writes that it enter-

* Epidem. L. vi.

† Comment. in Hippocr. Epidem. L. vi.

‡ P. J. Van Maanen, Diss. de Absorpt. solidorum, p. 15.

§ Vid. Oudemans, Diss. de venarum imprimis mesericarum fabrica et actione. Gronin. 1792, p. 90.
|| Tom. i. p. 151; tom. vii. p. 47; ubi dicit; "Facilis etiam et patula via ab iisdem (mesericis) venis est in intestinum;" et Tom. vii. p. 89.

¶ Sommering, de morbis vasorum absorbentium, p. 122.